

REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-15 and 20-38 are in this case. Claims 1-14 and 20-38 have been rejected under § 103(a). Claim 15 is not subject to any rejection, and is therefore assumed to be objected to.

Independent claims 1 and 20, and dependent claims 9-11, 26 and 27, have now been amended. Dependent claims 5-8, 24 and 25 have now been canceled.

Request for Continued Examination (RCE)

This response is being filed together with a Request for Continued Examination (RCE). In view of the RCE, the Applicant respectfully requests that the finality of the previous Official Action be withdrawn and the amendments submitted herewith be entered and given full consideration.

Status of Claim 15

The Applicant's amendment of April 15, 2007, canceled claims 16-19 and 29-46 without prejudice. However, no change was made to original claim 15 which remains pending in this case in its original form.

The Examiner's Official Action of June 27, 2007, does not list claim 15 in the list of pending claims, nor does it describe any rejection of claim 15. As a result, the Applicant is left in doubt as to the status of pending claim 15. Clarification is respectfully requested.

§ 103(a) Rejections – Claims 1-14 & 20-38

The Examiner has rejected claims 1-14 and 20-38 under § 103(a) as being unpatentable over Bithel (US 4,348,357) in view of D’Ottone (US 2003/0133832) and Jacob (US 5,302,343). The Examiner’s rejections are respectfully traversed.

An overview of the teachings of Bithel, Jacob and D’Ottone has been provided in the previous response and will not be repeated here. The Examiner has asserted that the pulsed-pressure plasma sterilization system and method of Bithel teaches all features of the invention as claimed in independent claims 1 and 20 except for the use of ozone mixed with water vapor as the supplied gas. The Examiner has further asserted that the use of ozone mixed with water as a raw material for generating OH radicals is disclosed in the D’Ottone reference, albeit in the context of a room-temperature and pressure system based on photolysis. The Examiner suggests that it would have been obvious to a person having ordinary skill in the art to modify the pulsed-pressure plasma sterilization system of Bithel to employ an ozone and water mixture as raw material according to the teachings of D’Ottone.

In response, the Applicant respectfully submits that the argument presented previously are compelling, and overcome the rejections of record. Nevertheless, in order to expedite the prosecution, the Applicant has chosen to amend independent claims 1 and 20 to incorporate limitations generally similar to those of claims 5-8 and 24-25, respectively.

By way of introduction to the significance of the amendments, it should be noted that Bithel operates his sterilization technique totally within the range of conditions suited for plasma generation. Thus Bithel explicitly recites that the various pressure pulses occurring from t_1 through t_6 are performed with the plasma generator energized continuously (col. 4, lines 33-36). Even when referring to the possibility of

selective shut off of the discharge to prevent overheating of the object to be sterilized, it is clear that the working conditions remain unchanged, i.e., suited to continuous plasma.

With regard to water vapor, it is well known that water vapor is highly effective at quenching electric discharge. As a result, according to conventional thinking, one ordinarily skilled in the art would lack a reasonable expectation of success if he were to consider combining Bithel with the water and ozone combination of D'Ottone as proposed by the Examiner.

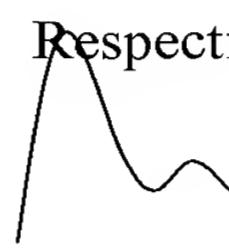
In contrast to these assumptions, the present invention teaches that quenching of the plasma discharge with a water/ozone mixture is actually an extremely effective manner of generating the desired OH radicals which are active in the sterilization process of the present invention. This unusual mode of operation, including breaking of the plasma discharge between each pressure pulse, is neither taught nor rendered obvious by the combination of references cited by the Examiner.

Referring specifically to the amended claim language, independent claims 1 and 20 now specify that water vapor and ozone are added so as to increase the pressure of the atmosphere within the chamber until the pressure reaches between 5 torr and 15 torr and said electrical discharge is broken.

Dependent claims 5-8, 24 and 25 which were rendered redundant by the amendment have now been canceled. Dependent claims 9-11, 26 and 27 have now been amended to make them depend directly from the corresponding base claims.

In view of the above amendments and remarks it is respectfully submitted that independent claims 1 and 20, and hence also dependent claims 2-4, 9-15 and 21-23 and 26-38 which depend therefrom, are in condition for allowance. Prompt notice of allowance is respectfully and earnestly solicited.

Respectfully submitted,



Mark M. Friedman
Attorney for Applicant
Registration No. 33,883

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